UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,261	12/07/2001	Philippe Damon	RAL920010012US1	6093

			EXAMINER
25299	7590	08/08/2005	NGUYEN, HAO X

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ART UNIT	PAPER NUMBER
2662	

DATE MAILED: 08/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/017,261	DAMON ET AL.
	Examiner	Art Unit	
	Hao X. Nguyen	2662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>12/07/2001</u>.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-26</u> is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1-26</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☒ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on <u>07 December 2001</u> is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a) ☐ All   b) ☐ Some * c) ☐ None of:

         1. ☐ Certified copies of the priority documents have been received.

         2. ☐ Certified copies of the priority documents have been received in Application No. _____.

         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
     Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
     Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Specification

The disclosure is objected to because of the following informalities: On page 2,

line 21 of the specification, 39 should be changed to 38 as shown in Figure 2.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed
> or described as set forth in section 102 of this title, if the differences between the
> subject matter sought to be patented and the prior art are such that the subject
> matter as a whole would have been obvious at the time the invention was made
> to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was
> made.

Claims 1 - 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Cunningham et al. (US Pat. No. 6,888,837 B1), in view of Benchetrit et al. (US Pub. No.

2003/0065817 A1).

In regards to claims 1, 10, and 18,

Referring to Figure 1, Cunningham discloses a communication network that

includes a NAT 102 performing the network address translations according to a logic

flow diagram shown in Figure 9 (abstract; column 4, lines 45-49, 61-65; claims 1 – a

method for performing network address translations for a session in a network; claim 10

– a system performing network address translations for a session in a network; claim 18

– a computer-readable medium containing a program for performing network address

translations for a session in a network).

Domain 1 includes Host X (Figure 1; claims 1, 10, and 18 – the local network

domain including at least one computer system) having a Source Local Address A and

being associated with a Source Global Address A12 (Figures 1 and 2A; claims 1, 10

and 18 – each of the at least one computer system having a local address and being

associated with a global address).

Referring to Figure 9, Cunningham discloses a logic flow diagram showing NAT

102 logic for processing a packet received from the source host. The packet includes a

source address equal to a source host local address and a destination address equal to

a destination host global address (column 13, lines 45-52; claims 1, 10 and 18 – each of

the plurality of packets including source information and destination information).

Referring to Figure 2D, Cunningham discloses a network address translator

finding a destination address translation entry that maps a destination host global

address to a destination host local address for a destination address domain. The

destination host global address indicates that the message is inbound. Referring to

Figures 2A, 2B, and 2C, Cunningham discloses a network address translator finding a

source address translation entry that maps a source host local address to a unique

source host global address. The source host global address indicates that the message

is outbound (column 2, lines 20-23, 26-40; claims 1, 10 and 18 – searching a global

address table for a match of a key for each of the plurality of packets to determine a

direction of travel for each of the plurality of packets, the key being provided using a

portion of the destination information, the global address table including at least one

entry, each of the at least one entry corresponding to the global address for a first

corresponding computer system).

Referring to Figures 2A, 2B, and 2C, Cunningham discloses the NAT 102

maintaining three source address translation tables that provides mapping between

source local addresses and source global addresses (column 5, lines 41-55; claims 1,

10 and 18 – asymmetrically translating the source information and destination

information for each of the plurality of packets using an address translation table; the

address translation table including at least one entry, each of the at least one entry

corresponding to the local address for a first at least one computer system within the at

least one local network domain of the network).

Referring to Figure 2D, Cunningham discloses a destination address translation

table mapping destination global addresses to their corresponding destination local

addresses, and including columns for ports (claims 1, 10, and 18 – the session table).

Cunningham discloses the limitations of claims 1, 10, and 18, but it does not

disclose translating the source information and destination information for each of a

plurality of packets using a session table based on a direction the packet is traveling;

the session table including at least one session table entry, each of the at least one

session table entry corresponding to a specific connection between two computer

systems.

Referring to Figure 7, Benchetrit discloses data transfer sessions for an inbound packet having links, between an extended public-address and an extended private-address, for different host computers (Figure 5; paragraphs [0075], [0085], [0089], [0090] and [0091]).

Referring to Figure 5, Benchetrit discloses a host 57 linked to a router 56 belonged to a WAN 58 (paragraph [0076]).

Referring to Figure 7, Benchetrit discloses a table 80 that lists entries (numbered 91-97) for data transfer sessions between the public and private networks (paragraphs [0089], [0090] and [0091]; claims 1, 10, and 18 – session table based on a direction the packet is traveling; the session table including at least one session table entry, each of the at least one session table entry corresponding to a specific connection between two computer systems).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the network address translations of Cunningham by including a session table so an extended-multilink manager can use this table to combine the tasks of data packet address translation and data packet conveyance over multiple links for session data transferring inbound between the public and private networks (Benchetrit; paragraphs [0020] and [0091]).

In regards to claims 2, 11, and 19,

Referring to Figure 2D, Cunningham discloses a network address translator finding a destination address translation entry that maps the destination host global address to the destination host local address for the destination address domain. The

destination host global address indicates that the message is inbound (column 2, lines 26-40; claims 2, 11, and 19 – determining the direction the packet is traveling is inbound if an exact match is found while searching the global address table).

Referring to Figures 2A, 2B, and 2C, Cunningham discloses a network address translator finding a source address translation entry that maps the source host local address to the unique source host global address. The source host global address indicates that the message is outbound (column 2, lines 20-23; claims 2, 11, and 19 - determining the direction the packet is traveling is outbound if the exact match is not found while searching the global address table).

In regards to claims 3, 12, and 20,

Referring to Figure 9, Cunningham discloses the NAT 102, in step 916, translating a source address from the overlapping source host local address to a unique source host global address for a destination domain. The source host global address indicates that the message is outbound (column 13, lines 60-67; column 14, lines 1-12; claims 3, 12, and 20 - translating the source information using the address translation table if the packet is outbound).

Referring to Figure 2D, Cunningham discloses a destination address translation table mapping the destination global addresses to their corresponding destination local addresses (claims 3, 12, and 20 – the session table).

But Cunningham does not disclose translation of the destination information using the session table with session data (identified by network address and port number) if the packet is inbound.

Referring to Figure 7 (table 80), Benchetrit discloses the mapping used for

session data transfer inbound between the public and private networks (paragraphs

[0089], [0090] and [0091]; claims 3, 12 and 20 – and translating the destination

information using the session table if the packet is inbound).

It would have been obvious to one of ordinary skill in the art at the time of the

invention to modify the network address translations of Cunningham by including a

session table so an extended-multilink manager can use this table to combine the tasks

of data packet address translation and data packet conveyance over multiple links for

session data transferring inbound between the public and private networks (Benchetrit;

paragraphs [0020] and [0091]).

In regards to claims 4, 9, 15, 21, and 26,

Referring to Figure 2D, Cunningham discloses a network address translator

finding a destination address translation entry that maps a destination host global

address to a destination host local address for the destination address domain. The

destination host global address indicates that the message is inbound (column 2, lines

26-40; claims 4, 9, 15, 21, and 26 - if the full match is found).

Referring to Figures 2A, 2B, and 2C, Cunningham discloses source local

addresses mapped to source global address. In order to translate a destination address

of a packet, the network address translator (NAT) finds a destination address translation

entry that maps a destination host global address to a destination host local address for

a destination address domain, extracts a destination host local address from the

destination address translation entry, and inserts the destination host local address as

the destination address of the packet (column 2, lines 18-26; (column 2, lines 32- 40;

claims 4, 9, 15, 21, and 26 - transposing the destination information with the source

information, providing a symmetric key using transposed source and destination

information).

Cunningham also discloses the mapping between source local addresses and

source global addresses. In order to translate a source address of the packet, the

network address translator (NAT) finds a source address translation entry (numbered

from 202-218) that maps a source host local address from a source address domain to

a unique source host global address for a destination address domain, extracts the

source host global address from the source address translation entry, and inserts the

source host global address as the source address of the packet (column 2, lines 18-26;

claims 4, 9, 15, 21, and 26 – searching the address translation table using the source

information, performing the network address translation using address translation table

data, providing the symmetric key from translated source parameters, and using the

symmetric key to search the session table).

Referring to Figures 2A, 2B, and 2C, Cunningham discloses a network address

translator finding a source address translation entry that maps a source host local

address to a unique source host global address. The source host global address

indicates that the message is outbound (column 2, lines 20-23; claims 4, 9, 15, 21, and

26 - if the full match is not found).

But Cunningham does not disclose at least one global port associated with the

network beyond the local network domain and at least one local port associated with the

local network domain connecting the first at least one computer system to the network,

using the symmetric key to search a session table, and performing network address

translation using session table data if the full match is not found.

Referring to Figure 7 (table 80), Benchetrit discloses a mapping used for session

data transfer inbound between an extended private-address (private network-address

and private port-number) and an extended public-address (public network-address and

public port-number) (paragraphs [0089], [0090], and [0091]; claims 4, 9, 15, 21, and 26 -

and at least one global port is associated with the network beyond the local network

domain and at least one local port is associated with the local network domain

connecting the first at least one computer system to the network).

Referring to Figure 7, Benchetrit discloses rows 91 and 92 (Figure 5; paragraph

[0090]; claims 4, 9, 15, 21, and 26 - using the symmetric key) having data session

parameters from data sessions originating from the same host computer 71 (Figure 5;

paragraph [0090]; claims 4, 9, 15, 21, and 26 - to search a session table).

Benchetrit also discloses a mapping used for session data transferring inbound

between public and private networks (paragraph [0090]; claims 4, 9, 15, and 21 - and

then performing network address translation using session table data).

It would have been obvious to one of ordinary skill in the art at the time of the

invention to modify the network address translations of Cunningham by including a

session table that includes port numbers connecting a private network to a public

network so an extended-multilink manager can use this table to combine the tasks of

data packet address translation and data packet conveyance over multiple links for

session data transferring inbound between the public and private networks (Benchetrit;

paragraphs [0020] and [0091]).

In regards to claims 5, 13, and 22,

Cunningham discloses the limitations of claims 1, 10, and 18 but it does not

disclose table indexed using the symmetric key and the processor identifies the session

utilizing the symmetric key to access an entry for the session in the session table.

Referring to Figure 7, Benchetrit discloses the extended public-address acting as

an identifier of the session that consists of entries 91 and 92 (Figure 5; paragraph

[0090]; claims 5, 13, and 22 – table is indexed using the symmetric key) having data

session parameters from data sessions originating from the same host computer 71

(Figure 5; paragraph [0090]; claims 5, 13, and 22 – the processor identifies the session

utilizing the symmetric key to access an entry for the session in the session table).

It would have been obvious to one of ordinary skill in the art at the time of the

invention to modify the network address translations of Cunningham by including a

session table that is indexed using a symmetric key so a network address translator can

use this key to find the destination address translation entry that maps the destination

host global address to the destination host local address for the destination address

domain, extract the destination host local address from the destination address

translation entry, and insert the destination host local address as the destination

address of the packet (Cunningham; column 2, lines 32-39).

In regards to claims 6, 14, and 23,

Cunningham discloses the limitations of claims 1, 10, and 18 but it does not

disclose the session table having a single entry per session.

Referring to Figure 7, Benchetrit discloses a session table having a single entry

(entry numbered from 91-97) per session (paragraph [0090]; claims 6, 14, and 23 - the

session table has a single entry per session).

It would have been obvious to one of ordinary skill in the art at the time of the

invention to modify the network address translations of Cunningham by including a

session table that has a single entry per session so each session is distinct and

therefore no conflict occurs between sessions (Benchetrit; paragraph [0090]).

In regards to claims 7, 16, and 24,

Cunningham discloses the limitations of claims 1, 10, and 18 but it does not

disclose the first at least one computer system being a server.

Referring to Figure 5, Benchetrit discloses a Local Area Network comprising of a

host 57 (paragraph [0076] - the first at least one computer system is a server).

It would have been obvious to one of ordinary skill in the art at the time of the

invention to modify the network address translations of Cunningham by including a

network that has at least a computer server because the server can provide the data

packet address translation and data packet conveyance over multiple links (Benchetrit;

paragraph [0020]).

In regards to claims 8, 17, and 25,

Cunningham discloses the limitations of claims 1, 10, and 18 but it does not

disclose the server is partitioned into multiple logical servers and each of which has a

different global network address.

Referring to Figure 5, Benchetrit discloses a Local Area Network comprising of

four computing systems 71, 72, 73, and 74 that are in communication with each other

(paragraph [0075] - the server is partitioned into multiple logical servers).

Benchetrit also discloses four host computers 71, 71, 73, and 74 that have IP

private network-addresses (paragraph [0075] - each of which has a different global

network address).

It would have been obvious to one of ordinary skill in the art at the time of the

invention to modify the network address translations of Cunningham by including a

server that is partitioned into multiple logical servers so each logical server can assign

its own session private port-numbers (Benchetrit; paragraph [0090]).

Each of logical servers has a different global network address that corresponds

to the link along which data of the session is transferred, so no conflict occurs between

sessions (Benchetrit; paragraphs [0090] and [0091]).

Conclusion

The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

Gervais et al. (US Pat. No. 5,856,974) discloses Internetwork Address Mapping

Gateway.

Fangman et al. (US Pat. No. 6,687,245 B2) discloses System and Method For Performing IP Telephony.

Shigeta (US Pat. No. 6,667,974 B1) discloses Packet Repeater Machine And Packet Relay Method.

Hughes et al. (US Pat. No. 6,862,267 B1) discloses Determining Network Addresses And Ports Using Table From A Description File.

Tajiri et al. (US Pat. No. 6,886,027 B2) discloses Communication Apparatus With Address Translation For Multimedia Communication In Different Address Spaces And Multimedia Communication Method Compatible With Address Translation.

Wilson (US Pat. No. 6,885,667 B1) discloses Redirection To A Virtual Router.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hao X. Nguyen whose telephone number is 571-272-8195. The examiner can normally be reached on M-F 8AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 571-272-8195. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Hao X. Nguyen
Examiner
Art Unit 2662

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